

D¹
Con't
a plurality of brush segments mounted within said groove of said packing ring segment, each said brush segment having a packet of bristles with said bristles having tip portions trimmed to terminate along a radius of curvature continuously extending along the longitudinal extent of said body portion so as to form a labyrinth seal with said turbine shaft, and

each said bristle being disposed in a plane substantially parallel to the principal plane of said rotor and extending in the direction of rotation of said turbine shaft.

✓ Claim 2, line 2, delete "segment" and replace with -packet-.

✓ Claim 3, line 1, after "claim" delete "1" and replace with -2-.

✓ Claim 10, line 5, delete "casting" and replace with -casing-.

Sub
10. (Amended.) A packing ring for use in forming a seal with a turbine shaft rotatably mounted within the casing of an axial flow elastic fluid turbine, wherein said axial flow elastic fluid turbine includes at least one stage having (i) at least one diaphragm stationarily mounted in said cas[t]ing and having a plurality of steam directing nozzles, and (ii) a rotor fixedly attached to said turbine shaft and having a plurality of blades bounded by a shroud and disposed adjacent said plurality of steam directing nozzles, said packing ring comprising a plurality of packing ring segments, each said packing ring segment being mounted in a groove circumferentially in said diaphragm for forming a seal with said turbine shaft;

each said packing ring segment including

D²
a body portion for mounting within said circumferentially formed groove and having a longitudinal extent, a vertical extent, and a horizontal extent, and being particularly adapted for mounting in a portion of said diaphragm, said body portion having a brush mounting groove formed along said vertical extent and extending along said longitudinal extent; and

a plurality of brush segments mounted within said brush mounting groove of said packing ring segment, each said brush segment having a packet of bristles with said bristles having tip portions trimmed to terminate along a radius of curvature adapted to form a steam seal with said turbine shaft, and

or
con 4

each said bristle being disposed in a plane substantially parallel to the principal plane of said rotor and extending in the direction of rotation of said turbine shaft; and

each segment [of said seal ring] further comprising:

an inner arcuate portion [having seal teeth extending therefrom in the direction of and adjacent to said rotating shaft a radially outwardly facing arcuate surface on said seal ring segment which is located opposite to a radially inward facing arcuate surface on said casing for limiting said large clearance position by contact between said opposing surfaces], an outer ring portion disposed within said [seal ring] groove for both axial and radial movement of said segment therein and having a pair of shoulders extending axially in opposite directions for making radial contact respectively with [said] a pair of spaced apart shoulders on said casing and thereby limiting [said small clearance position] movement of said segment radially with respect to said shaft;

D²
con 4 a neck portion connected between said inner arcuate portion and said outer ring portion and extending between said casing shoulders, said neck portion having an axial thickness which is less than the distance between said opposing casing shoulders to thereby axially locate said seal ring segment against one of said casing shoulders and provide a contact pressure seal at the said side of said neck portion which is subject to lower turbine fluid pressure; and

a radial positioning means comprising a spring against said ring segments to forcibly cause said segments to move [to said large clearance position contacts, while] radially inward towards said shaft, whereas working fluid [which is] flow[s]ing into to the annular space between said casing and said ring segments will urge said segments [toward said small clearance position] radially outward away from said shaft, whereby at low speed and small turbine loads the spring forces will predominate, while at high flows and high working fluid pressure the pressure forces will predominate[;].

✓ Claim 11, line 2, delete "segment" and replace with -packet-.

15. An axial flow elastic fluid turbine comprising:

an outer cas[t]ing;

a turbine shaft rotatably supported in said outer cas[t]ing; and

D

a plurality of turbine stages installed along said turbine shaft and contained within said outer cas[t]ing, each said turbine stage including

a diaphragm stationarily mounted in a recess formed in said turbine cas[t]ing and having a plurality of steam directing nozzles,

a rotor fixedly attached to said turbine shaft and having a plurality of blades bounded by a shroud band and being disposed adjacent said plurality of steam directing nozzles, and

a packing ring consisting of an arrangement of packing ring segments mounted in a circumferentially extending groove formed in said diaphragm and providing a continuously extending seal with said turbine,

each said packing ring segment including

a body portion for mounting within said circumferentially formed groove and having a longitudinal extent, a vertical extent, and a horizontal extent, and being particularly adapted for mounting in a portion of said diaphragm, said body portion having a brush mounting groove formed along said vertical extent and extending along said longitudinal extent; and

a plurality of brush segments mounted within said brush mounting groove of said packing ring segment, each said brush segment having a packet of bristles with said bristles having tip portions trimmed to terminate along a radius of curvature adapted to form a steam seal with said turbine shaft, and

each said bristle being disposed in a plane substantially parallel to the principal plane of said rotor and extending in the direction of rotation of said turbine shaft;

a radial positioning means comprising a spring between adjacent ring segments to forcibly cause said segments to move [to a large clearance position, while] radially outward with respect to said turbine shaft, whereas working fluid flow[s]ing into to an annular space between said casing and said ring segments urges said segments [toward said small clearance position] radially inward with respect to said turbine shaft, whereby at low speed and small turbine loads the spring forces will predominate, while at high flows and high working fluid pressure the pressure forces will predominate;

wherein said brush segments form a continuous seal.

✓ Claim 16, line 2, delete "segment" and replace with -packet-.

✓ Claim 17, line 1, change "15" to -16-.

D3 15 21. (Amended.) The axial flow elastic fluid turbine as recited in claim 15, wherein [said inner arcuate portion of] said seal ring segment further comprises [an inner ring portion connected at one side to said neck portion and includes said radially outward facing arcuate surface for limiting said large clearance position by said contact with said casing surface said inner ring portion having said] seal teeth extending therefrom.

D4 18 24. (Twice amended.) A packing ring segment for use in forming a labyrinth seal with a turbine shaft rotatably mounted within the casing of an axial flow elastic fluid turbine, wherein said axial flow elastic fluid turbine includes at least one stage having (i) at least one diaphragm stationarily mounted in said cas[t]ing and having a plurality of steam directing nozzles, and (ii) a rotor fixedly attached to said turbine shaft for rotation about an axis of rotation and having a plurality of blades bounded by a shroud band disposed within a principal plane of said rotor and adjacent said plurality of steam directing nozzles, said packing ring segment comprising:

a body portion for mounting within a portion of said diaphragm and having a longitudinal extent, a vertical extent, and a horizontal extent, and being particularly adapted for mounting in a portion of said diaphragm, said body portion having a groove formed along said vertical extent and extending along said longitudinal extent, said body portion having a bore in [opposing] a side edge surface[s] for accepting a spring spanning said bore and [a bore in] an adjacent packing ring segment according to this claim; and

a plurality of brush segments mounted within said groove of said packing ring segment, each said brush segment having a packet of bristles with said bristles having tip portions trimmed to terminate along a radius of curvature continuously extending along the longitudinal extent of said body portion effective to form a labyrinth seal when a turbine shaft is positioned along said tip portions of said bristles, and

each said bristle being disposed at an acute angle with respect to said radius of curvature.

✓ Claim 25, line 1, change "20" to -24-; and